

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 62150CT	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2004/016521	International filing date (day/month/year) 08.11.2004	Priority date (day/month/year) 11.11.2003
International Patent Classification (IPC) or national classification and IPC H01M8/02, 8/10		
Applicant NITTA CORPORATION		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. ☒ (sent to the applicant and to the International Bureau) a total of 10 sheets, as follows:

☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

☒ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/016521

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 2-4, 8-10, 12-21 as originally filed/furnished
- pages* 1, 5-7, 11, 22 received by this Authority on 31.05.2005
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. 1 as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 2-14 received by this Authority on 31.05.2005
- nos.* _____ received by this Authority on _____
- ☒ the drawings:
- sheets 1/21-21/21 as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☒ The amendments have resulted in the cancellation of:
- ☒ the description, pages 23
- ☒ the claims, nos. 15-18
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☒ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☒ the description, pages 3-4
- ☒ the claims, nos. 1
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/016521

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	7-8, 10-14	YES
	Claims	1-6, 9	NO
Inventive step (IS)	Claims	10	YES
	Claims	1-9, 11-14	NO
Industrial applicability (IA)	Claims	1-14	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
Document 1: JP 2-168563 A (Ishikawajima Harima Heavy Ind.), 28 June 1990, claims and fig. 1 to 8			
Document 2: Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 120977/1986 (Laid-open No. 28251/1988) (Ishikawajima Harima Heavy Ind.), 24 February 1988, claims and fig. 1			
Document 3: JP 2000-133290 A (Mitsubishi Plastics, Inc.), 12 May 2000, claims and fig. 1			
Document 4: JP 2003-151572 A (Hitachi, Ltd.), 23 May 2003, claims and fig. 1			
Document 5: JP 2000-138067 A (Toyota Motor Corp.), 16 May 2000, claims and fig. 1 to 11			
Document 6: JP 2001-307747 A (Toyota Motor Corp.), 02 November 2001, claims and fig. 1			
Document 7: JP 2000-243408 A (Toyota Motor Corp.), 08 September 2000, claims, paragraphs [0037] to [0039], and fig. 1, 3, 6 and 7 & DE 19961496 A1, claims and fig. 1, 3, 6 and 7			
Document 8: JP 2001-357859 A (Riken Corp.), 26 December 2001, claims and fig. 1			
Document 9: JP 2001-351642 A (Riken Corp.), 21 December 2001, claims and fig. 1			

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/016521

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

Claims 1 to 6

The invention set forth in claims 1 to 6 lacks novelty and does not involve an inventive step in the light of newly cited documents 1 to 2.

Documents 1 to 2 indicate that the separators disclosed therein were formed by press-working a metal plate, and also indicate that protruding parts with a U-shaped cross section are pressure welded to the electrolyte tile (1) at the outer periphery of said separators.

Such being the case, the invention set forth in claims 1 to 6 can be said to be disclosed in documents 1 and 2.

Claims 7 to 8

The invention set forth in claims 7 to 8 does not involve an inventive step in the light of documents 1 to 2 and document 3 cited in the international search report.

Configurations wherein an elastic layer is provided between a separator and an electrolyte in order to improve the sealing characteristics thereof are well known in the technical field in question, as disclosed in document 3. Furthermore, it can be said to be possible for a person skilled in the art to delimit a suitable thickness or the like for said elastic layer, as appropriate.

Claim 9

The invention set forth in claim 9 lacks novelty and does not involve an inventive step in the light of

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/016521

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
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documents 1 to 2.

Protruding parts are formed on both sides of the individual cells of the fuel cells disclosed in documents 1 and 2, and thus the inventions in question are naturally considered to comprise two or more projections with tangent lines that are parallel to one another.

Claim 10

The invention set forth in claim 10 is novel and involves an inventive step in relation to all of the documents that are cited in the international search report.

The invention set forth in claim 10 is not disclosed in any of the documents that are cited in the international search report, and would not have been easy to conceive of, even for a person skilled in the art.

Claims 11 to 12

The invention set forth in claims 11 to 12 does not involve an inventive step in the light of documents 1 to 2, newly cited documents 4 to 6, and document 7 cited in the international search report.

The technical feature whereby the surfaces of the separator are coated with a coating layer that comprises a conductive rubber or a conductive synthetic resin is well known in the technical field in question, as disclosed in documents 4 to 7.

Claim 13

The invention set forth in claim 13 does not involve an inventive step in the light of documents 1 to

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/016521

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

documents 1 to 2.

Protruding parts are formed on both sides of the individual cells of the fuel cells disclosed in documents 1 and 2, and thus the inventions in question are naturally considered to comprise two or more projections with tangent lines that are parallel to one another.

Claim 10

The invention set forth in claim 10 is novel and involves an inventive step in relation to all of the documents that are cited in the international search report.

The invention set forth in claim 10 is not disclosed in any of the documents that are cited in the international search report, and would not have been easy to conceive of, even for a person skilled in the art.

Claims 11 to 12

The invention set forth in claims 11 to 12 does not involve an inventive step in the light of documents 1 to 2, newly cited documents 4 to 6, and document 7 cited in the international search report.

The technical feature whereby the surfaces of the separator are coated with a coating layer that comprises a conductive rubber or a conductive synthetic resin is well known in the technical field in question, as disclosed in documents 4 to 7.

Claim 13

The invention set forth in claim 13 does not involve an inventive step in the light of documents 1 to

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/016521

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
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2 and 4 to 7.

Document 7 indicates that a coating film (123) comprising a conductive resin is formed upon the surfaces of the separator with a binder (128) that functions as an adhesive layer interposed therebetween.

Claim 14

The invention set forth in claim 14 does not involve an inventive step in the light of documents 1 to 2, documents 4 to 7, and documents 8 to 9 cited in the international search report.

Separators for fuel cells wherein a highly conductive layer is formed upon the region that comes into contact with the electrolyte assembly in order to decrease the contact resistance therebetween can be said to be well known in the technical field in question, as disclosed in documents 8 to 9.